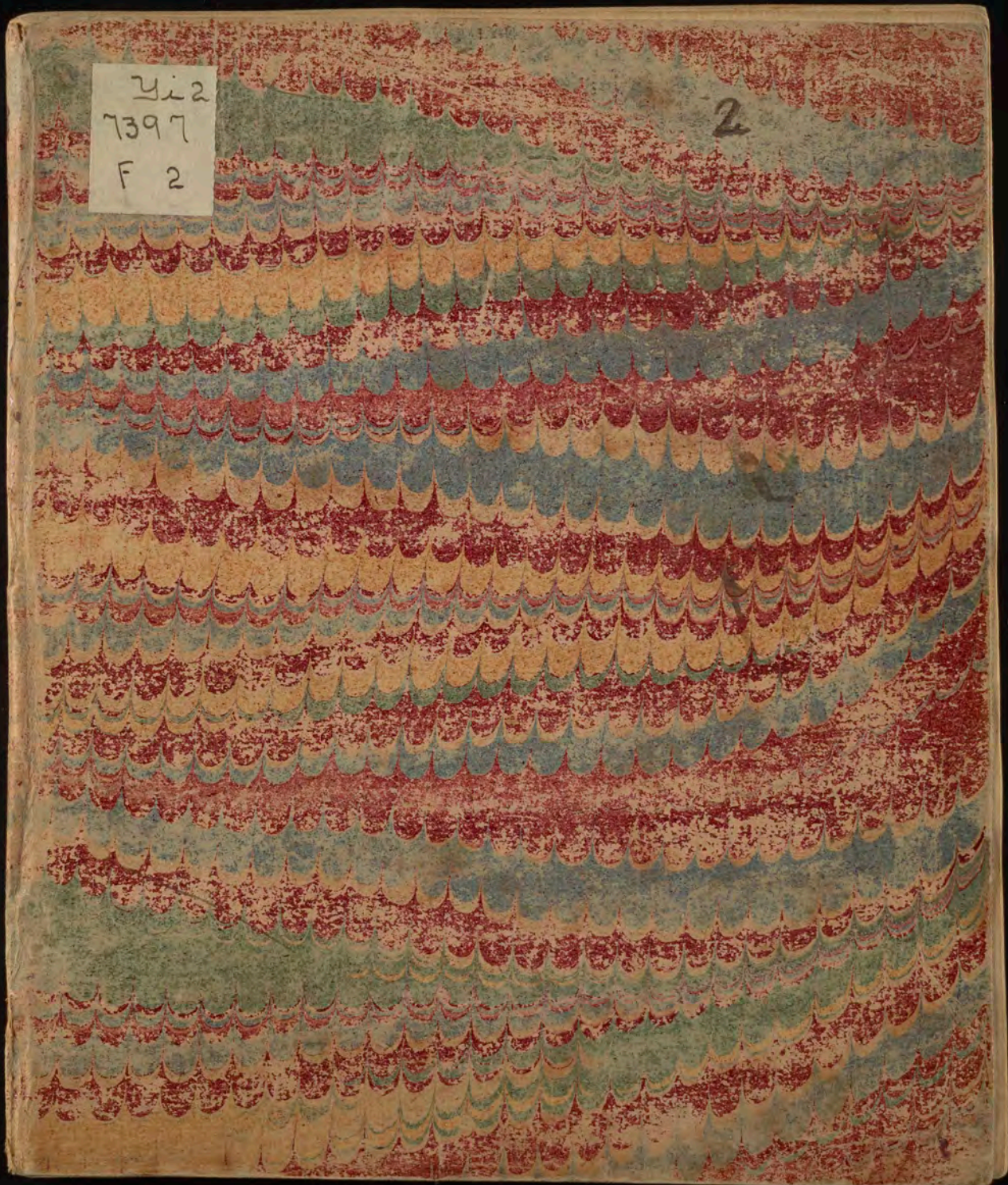
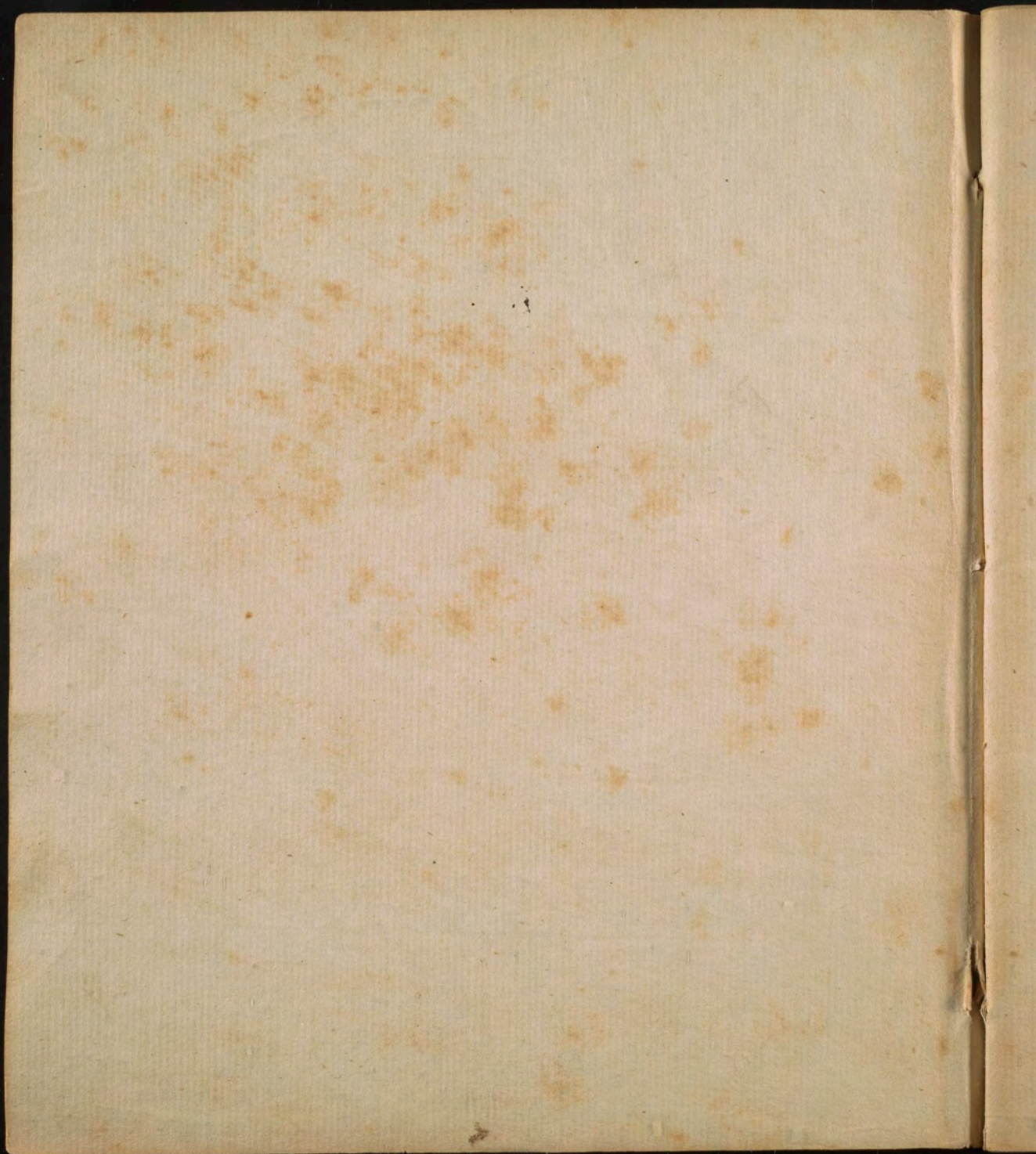


Yi2
7397
F 2

2





of animal life - continued.

of animal life in Sleep.	48
of Do ^{in different ages} in the fathers in Utter	73
— in Infancy	74
— in childhood	77
— in youth	78
— in middle life	79
— in old age	80
— in persons born deaf	
— blind & dumb.	87
— in Idiots	89
— In persons who fast	
— long	91

Further observations on animal life

see n^o 6. p: 268.

n^o 7 p: 281

D^o p: 283 -

D p: 298

n^o 13. p: 475

Introduce among inferences.

The "extremities of nerves ^{of} origin, or
the brain, the termination of them"

see pathology n^o. 1. p: 25

also n^o 9. 398. 399

47.
We proceed now to inquire into the
different degrees of Animal life as ex-
emplified in the sleeping state, and in its
different ^{stages} ~~periods~~ of human life. —

The stimuli which have ^{been} mention-
ed when they act ^{& within certain bounds} collectively produce
a healthy waking state. —

But they do not always act
^{non} in a determined & regular degree.
collectively. There is sometimes a deficiency
or absence of some of them. — How then
is life maintained in such cases? I
answer by the increased action of
such stimuli as remain. This Gen-
-eral principle is a law of the system. I shall
illustrate ^{it} in several instances
presently, & hereafter in many more

✓ Horses in a warm stable eat less than
in a cold one - owing to the stimulus
of heat supplying the absence of the
stimulus of food.

48

instances when we come to treat of the
causes of diseases. — This law being

assumed I proceed next to inquire into
the different degrees ^{& stages} of animal life as
I mentioned in our last lecture & I shall in-
~~exemplified in Sleep, and in the different~~
-quire into the State of Animal life in Sleep.
~~degrees of human life.~~ —

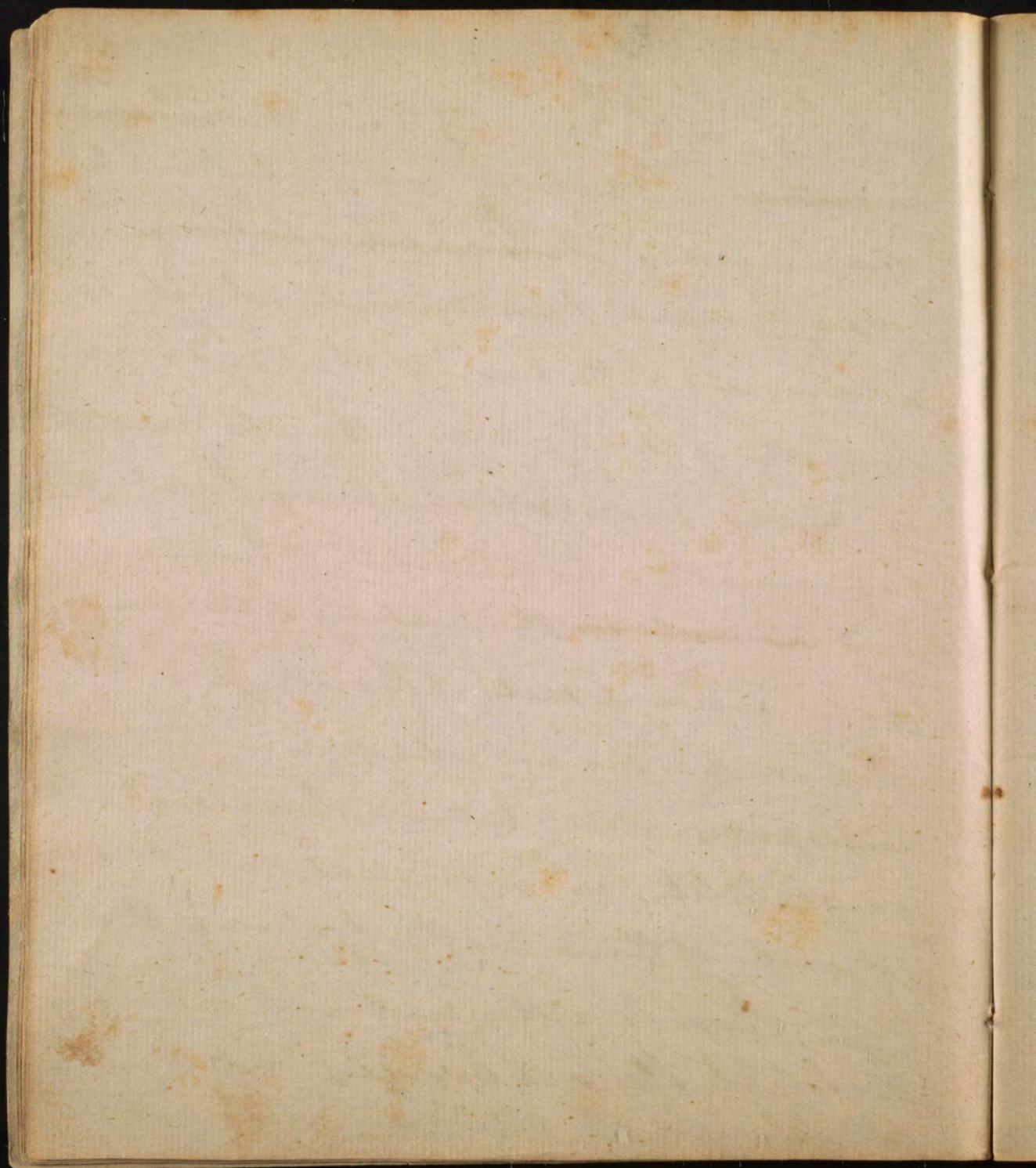
~~And first, as it appears in Sleep.~~
In order to render ~~pro~~ this Subject intelli-
~~ble and most apparent another~~
-gible, it will be necessary to observe
that all the stimuli that have been
mentioned act upon a power which
appears to be inherent in every
muscular fibre called Excitability.

what is the nature of this power is
difficult to determine. Dr. Haller called
it ~~Other~~. ~~It has~~ This name has
been ridiculed out of the University of

V Excitement & excitability in the healthy
State is one indivisible principle, and
perhaps alike ⁱⁿ every part of the body.
~~It is they~~ are, as I shall prove in
opposition to Dr Brown the reverse
of this in sickness. - I have said
that I inclined to adopt the opinion
of excitatⁿ being a substance, or
matter. The phenomena of
these make this probable.

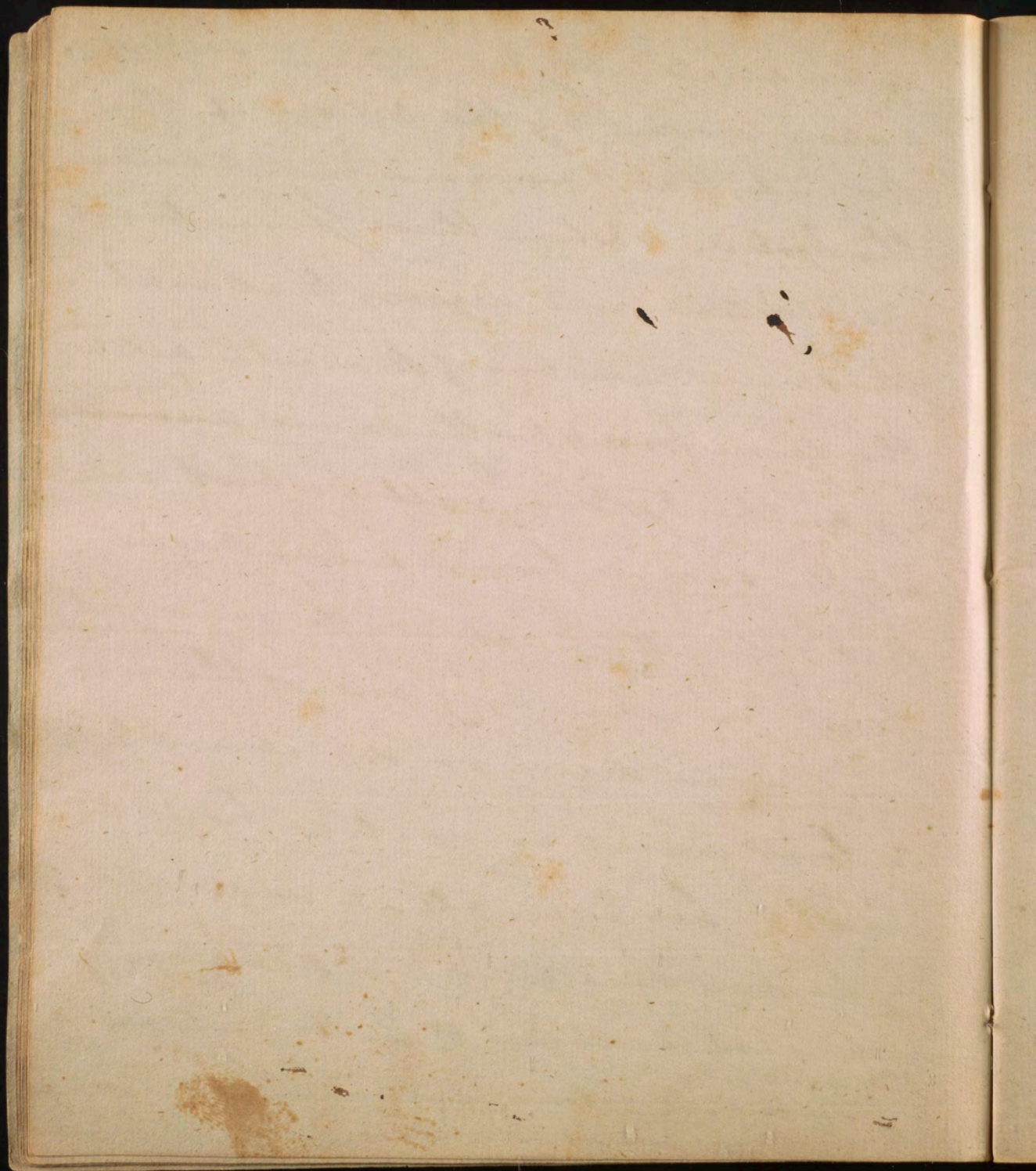
49
Edin^r by Dr Gregory who has substituted
nothing in the room of it. — It ^{is} ~~appears to~~
~~be capable~~ capable of accumulation &
diminution. ~~It is distinct, from~~
~~It appears to be~~
what is called Excitement which is
a term used to express the Vigor or
Strength of the System. Health consists
in a due proportion being kept up
between this Excitability & Excitement,
and ~~in a state~~ the waking state, in ^a ~~an~~
= certain degree of each of them. It is the
reverse of a disease which consists in
an disproportion between Excitement &
excitability, or an partial distribution
of each of them in the System. ✓

Sleep is either natural or artificial.
Natural Sleep is brought on by the
Diminution to a certain degree or point

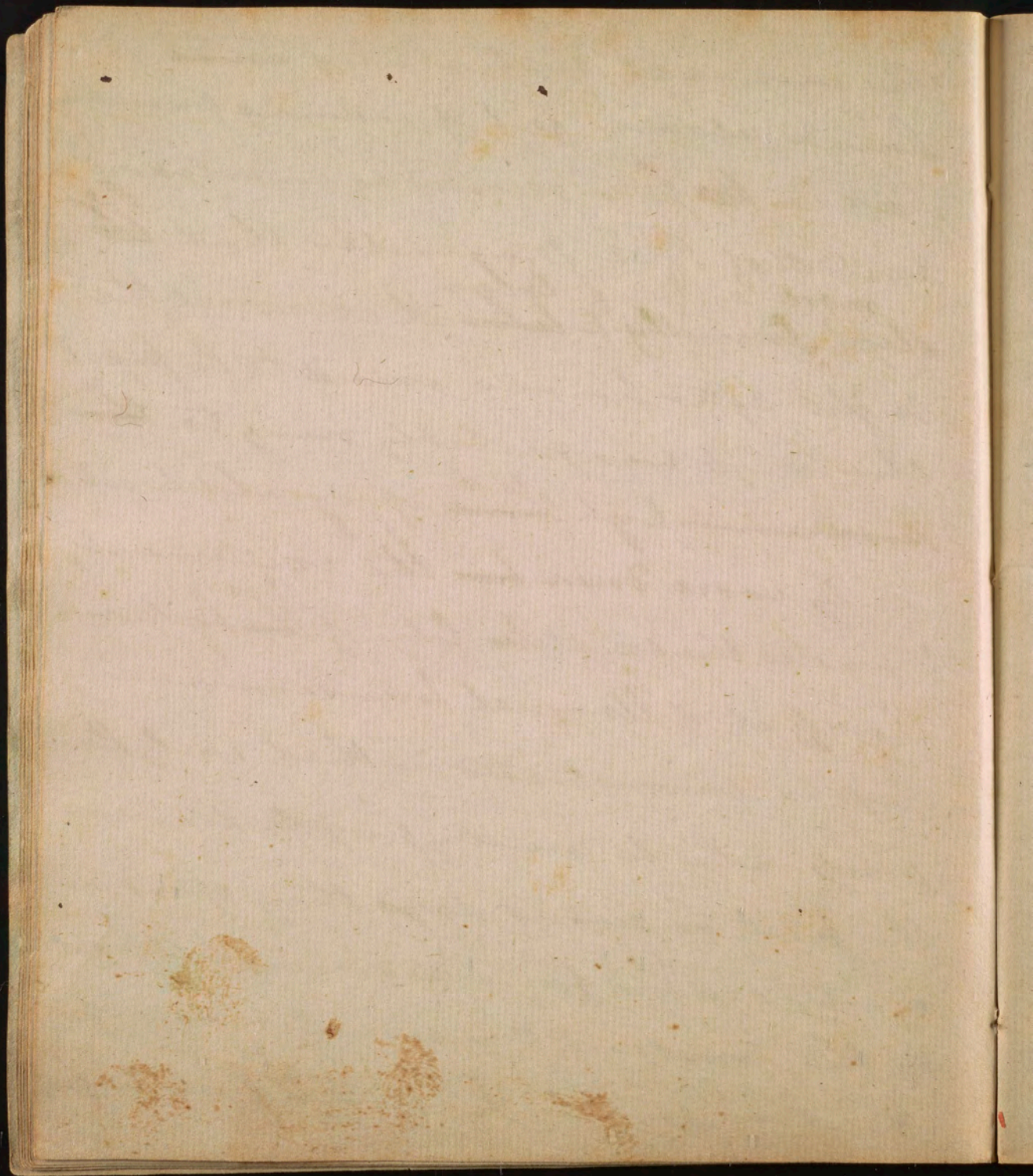


of the excitability & excitement of the System induced by the action of the Stimuli that have been mentioned on the System. When these Stimuli act in a determined degree, that is, when the same number of Stimuli act w.th the same force & for the same ^{time} ~~number~~ upon the System, ^{it} will be lost or at the same hour every night. But when they act with unusual force - or when any one of them is excessive in degree or duration, Sleep is lost or at an earlier hour than usual. - For Example. a long walk - or ride -

- 1 by persons accustomed to a sedentary life -
- unusual exercise of the Understanding -
- the Action ^{of}
- 1 strong passions or emotions - and

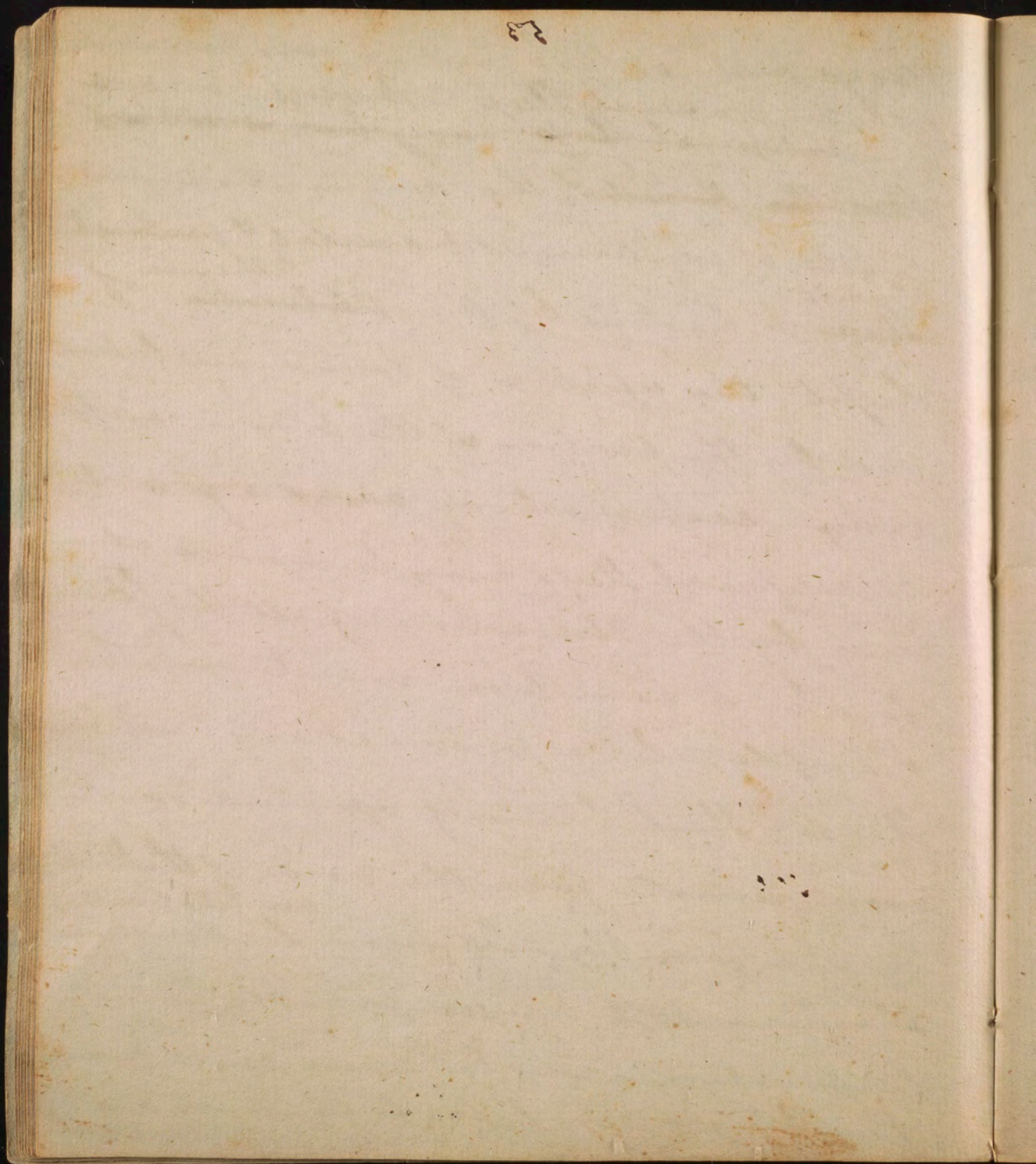


the continual application of ^{unusual} ~~usual~~
 sounds seldom fail of inducing premature
 sleep. — ~~Pop~~ It is recorded as an extraord.
 anecdote of Pope Ganganelli that ~~he~~
^{more} slept soundly & ^{longer} later than usual, the
 night after he was raised to the papal
 chair. It was probably owing to the
~~sudden~~ high ^{tide} ~~turn~~ of joy which sud-
 -denly wore down ~~his~~ the excitement,
 & wasted the excitability of ^{his} the system.
 The effect of Unusual sounds in inducing
 sleep is demonstrated in that early slee-
 -ping which country people discover
 the first or second days they spend in
 a city exposed from morning till night
 to the constant & unusual noise of
 hammer - files & looms & ^{to} carts - waggon,



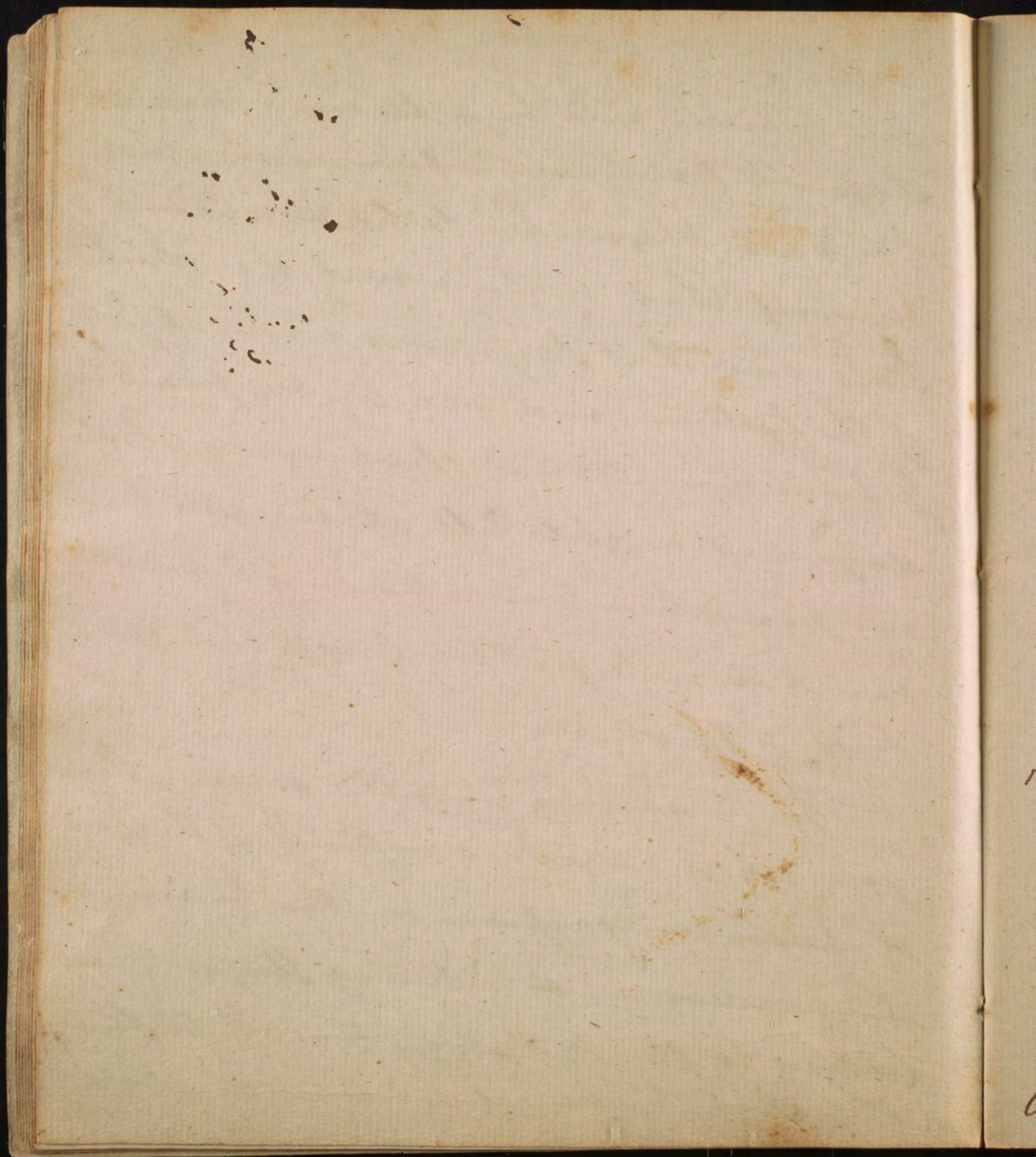
Drays and Coaches rattling over pavements.
 But further, Natural Sleep is brought on not
~~Artificial Sleep may be induced~~
 But ~~the~~ ^{only by} ~~Benefits~~, the diminution, and
 waste of excitement & excitation. Natural
 Sleep is hastened by the ^{absence of} ~~Abstract~~ of
 light - the cessation of sound - and labor,
 and by the position of the body in a soft
 bed, ~~each of which abstracts the mind~~

Artificial Sleep may be induced at any
 time by the Abstraction of all the ~~stimuli~~
 - li which have been mentioned. For
 example - let a person at any time in
 the day shut himself up in a dark
 room, remote from the noise of the street
 or of a family, - let him ^{on his back,} lie down in
^{on a} ~~a~~ soft bed - comfortable as to its
 temperature, - and let him cease from
 thinking upon subjects that are accom-
 -panied with



reflex sensations, or think only upon one subject, and he will soon drop a sleep. Dr Brechman relates an instance of a Dutch physician who persuaded himself that waking was a violent state, and that sleep was ^{the} natural state of the system, and who by the practice I have mentioned, slept away whole days and nights till at length he impaired his understanding & finally perished in a public hospital in a state of Idiotism. —

In inquiring into the cause of sleep you see I have said nothing of the effects of cold-compression on the brain & of narcotics in inducing sleep. These belong to the Pathology & not to the Physiology. — I shall hint at the sleep



54.

bro't on by cold, and narcotics only to
illustrate my account of it. —

~~you see then that sleep is the only~~
But if animal life depends upon the
action of Stimuli, how shall we account
for its continuance during Sleep when
the power of receiving impressions is
wasted, and when so many of the
Stimuli are abstracted from it? ² If
answer this question simply by re-
-crossing to that law in the System
by which the absence of one stimulus is
attended with an increased action of
others. — Let us apply this law to the
case before us.

At the usual hour of Sleep, there
is an abstraction of light — and sound —
of the Stimulus of muscular motion.

v But before I proceed to ^{describe them} ~~mention~~
I shall remark that the ^{horizontal} position of
the body ^{in sleep} and the total relaxation of
every muscle, greatly favours the
^{successful} action of less powerful stimuli
upon the system in the sleeping than
~~in the waking state~~ state. —

What was the Hindi ~~how that~~ ³³pre:

~~the~~ conscious life which remains are
the stimulus

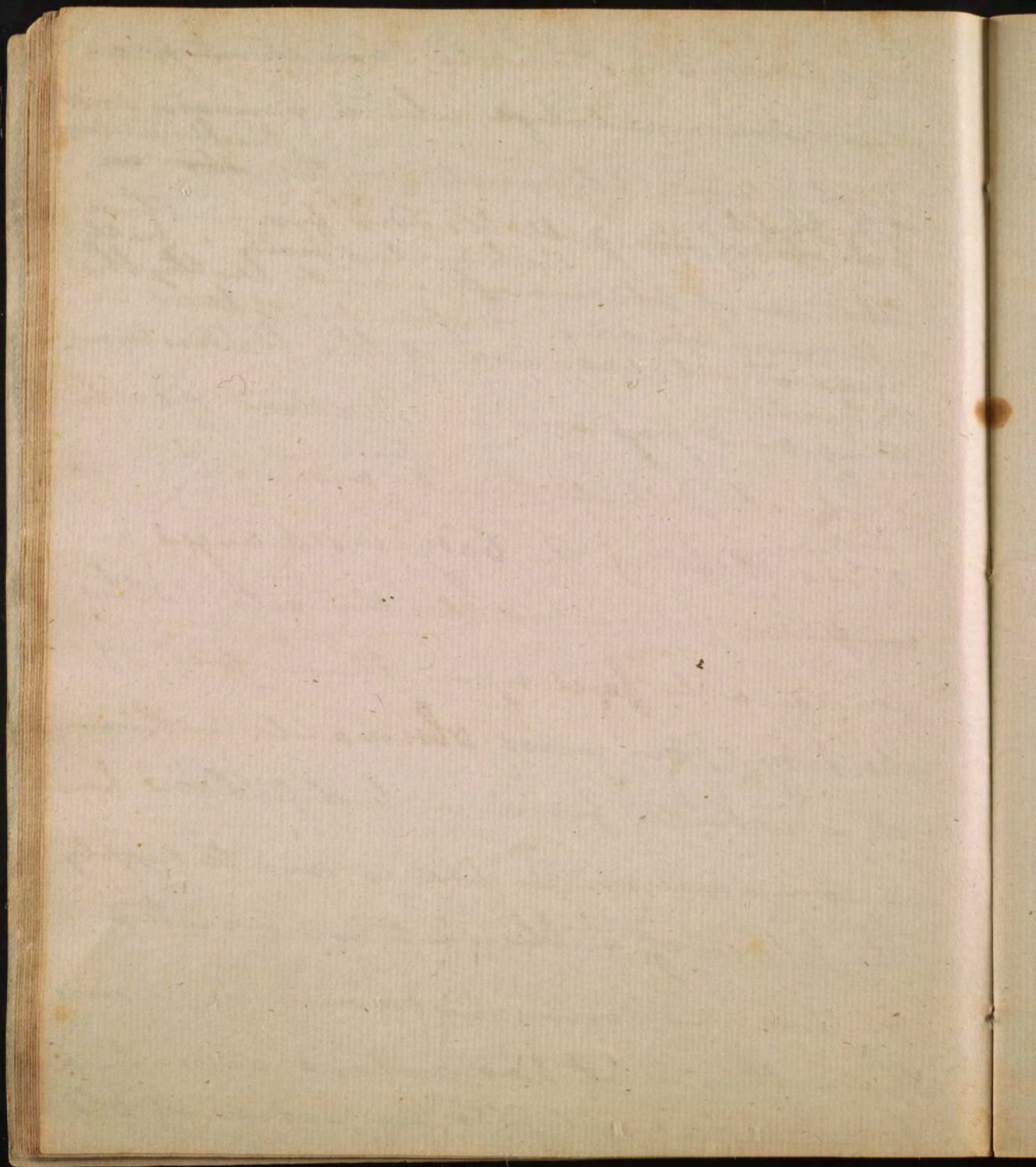
Heat - Air - Stimulant - or the ~~use~~
of a bull ^{or} gall bladder from the
~~gall~~ of the ^{the} Stimulus ^{being} a bull
to reach lastly the

the Stimulus being a fine
Absence of Glimerat - and lastly the
Urinary bladder - the Stimulus of bases in
occasional exercise of the Urinary
the bowels - - - - - in Dreams of each

the bowels -
-ding and papisms in Dreams of each
of which I shall treat ⁱⁿ order. -

2 The Heat of the Body discharged and confined under bed clothes acts with considerable force upon the surface of the body. It is most observable when it is exhaled from a bed fellow - hence a companion in bed is said to supply the place of a blanket in winter.

It has in some instances done more than this - it has restored departing life when applied to the bodies of old



people, - witness the damsel who
 slept lay for this purpose in the bosom
 of the Shing of Israel. - The advantages
 of this external heat will appear
 when we consider how impracticable,
 or how imperfect sleep is when we
 lay under too light covering. -

The ^{during sleep} air continues ^{pure} to ~~not~~ supply
 the lungs with that principle w^h
 we shall soon call ^{Oxygen or} dephlog. ^{Air &} during
 sleep which we shall hereafter prove
 to be the cause of animal heat ei-
 ther directly or indirectly. ^{By its} ~~during sleep~~
 gentle stimulus it keeps up the action
 of the lungs, and probably by its
 mixture with the blood it carries
 with it a stimulus to the left ventri-
 cle

well known that it is
+ It is, during the sleep of plants that
they discharge their unwholesome air.

of the heart, and the ~~for~~ beginning of
the Artie system. I am disposed to
believe that ~~either more phlogiston~~
~~is discharged, or more~~ ^{dephlog.} Air
is decomposed, & phlogisticated, ^{sleep}
~~is absorbed~~ during ~~the night~~ than
any other time, - for the smell of a
^{close} room in which a person has slept
one night is much more disagreeable,
than of a close room in which
half a dozen healthy persons have
sat during the same number of
hours in the day time. The deep & ⁺
slow respiration which takes place
in sleep seems to ~~favor~~ ^{confirm} this idea.
- ~~This addition to the force of respi-~~
~~cation~~ has a manifest action

& hence ~~to~~ ^{the} greater fullness, and slow-
 ness of the pulse in Sleep than in
 the Waking state - ~~and~~ ^{for} this state of
 the pulse I hope to prove hereafter
 arises from the action of Stimuli upon
 it - hence it occurs so uniformly after
 the use of Opium. - Sleep then in one
 respect resembles a fever in having the
 excitement of the muscular fibres ab-
 -tracted from them & concentrated in
 the Arterial system. - ~~perhaps owing~~
~~to weaker action of Stimuli on it.~~ There
 appears further to be a transmutation
 of sensibility into contractility during
 Sleep, by which means ^{the arterial} muscular fibres
^{probably} are more easily moved than in the
 waking state. That Sensibility is diminished in

upon the circulation of the blood, &
 upon the whole arterial system. There
 are two facts I know which oppose
 this opinion - viz ¹ M^r In^d Hunter
 found by a thermometer that
 the body was one degree cooler in
 the sleep than in the waking state,
^{2^{ly}} and the phenomena of fever ^{is} ~~indicates~~
 show that the heat of the body is ~~en-~~
~~-creased with the quickness of respira-~~
~~-tion. Perhaps I am disposed to suspect~~
~~some fallacy in M^r Hunter's experiment,~~
~~for the more frequent recurrence of fever~~
~~in ^{vessels} people~~
~~with its usual symptoms of a dry tongue~~
~~and skin in the sleep is ^{vessels} people~~
~~than in the ~~day time~~ waking state~~
~~clearly proves that the ~~fine~~ sleep~~

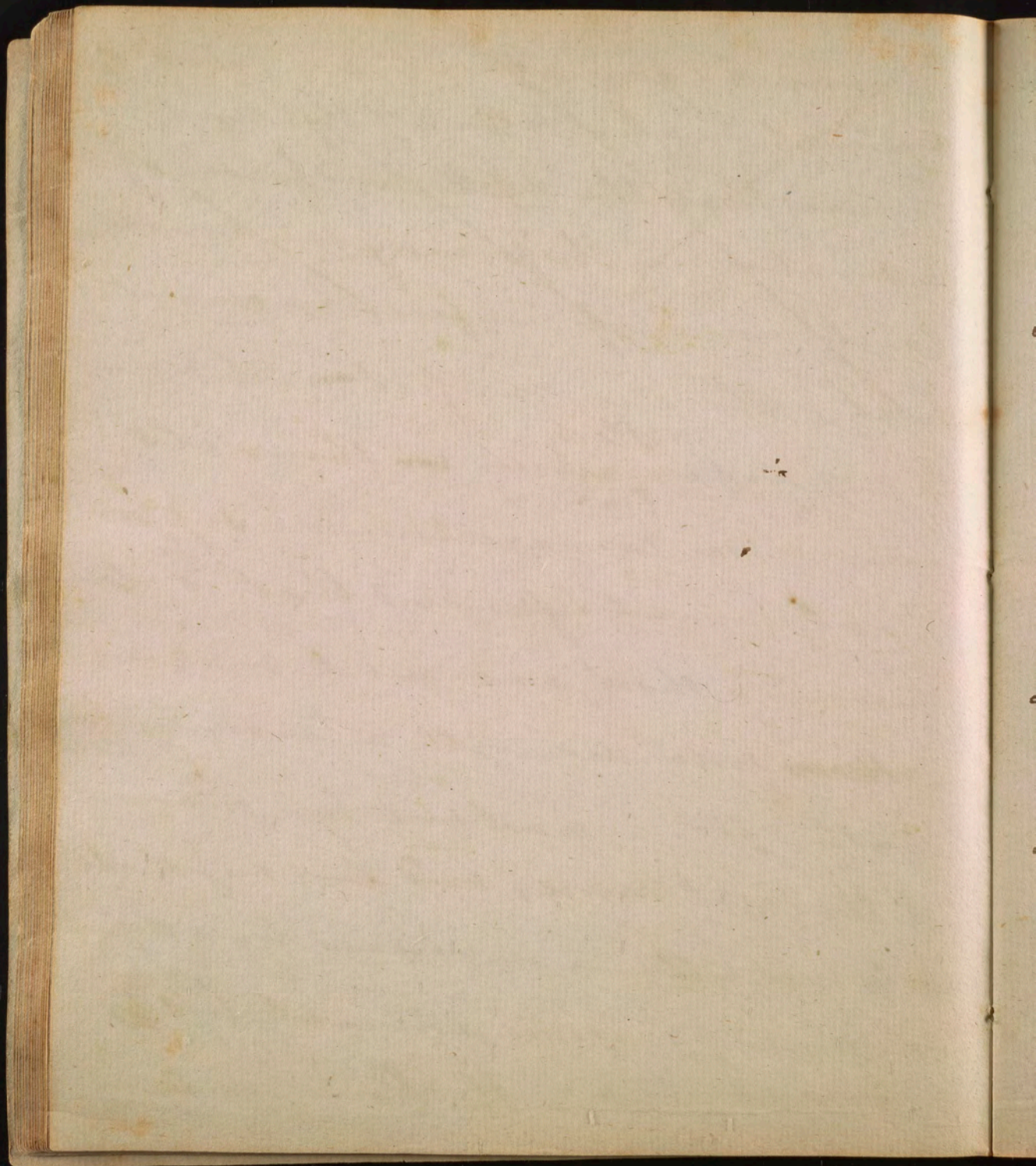
Heaps I shall prove, when I come to
treat of that state of the system.

The Arteries act see p. ²¹⁰ ~~183~~ of
Lectures defence of blood letting - an
addition ^{to} of printed work - on the
importance of the Arteries in ani-
mal life - to be bro't in here.

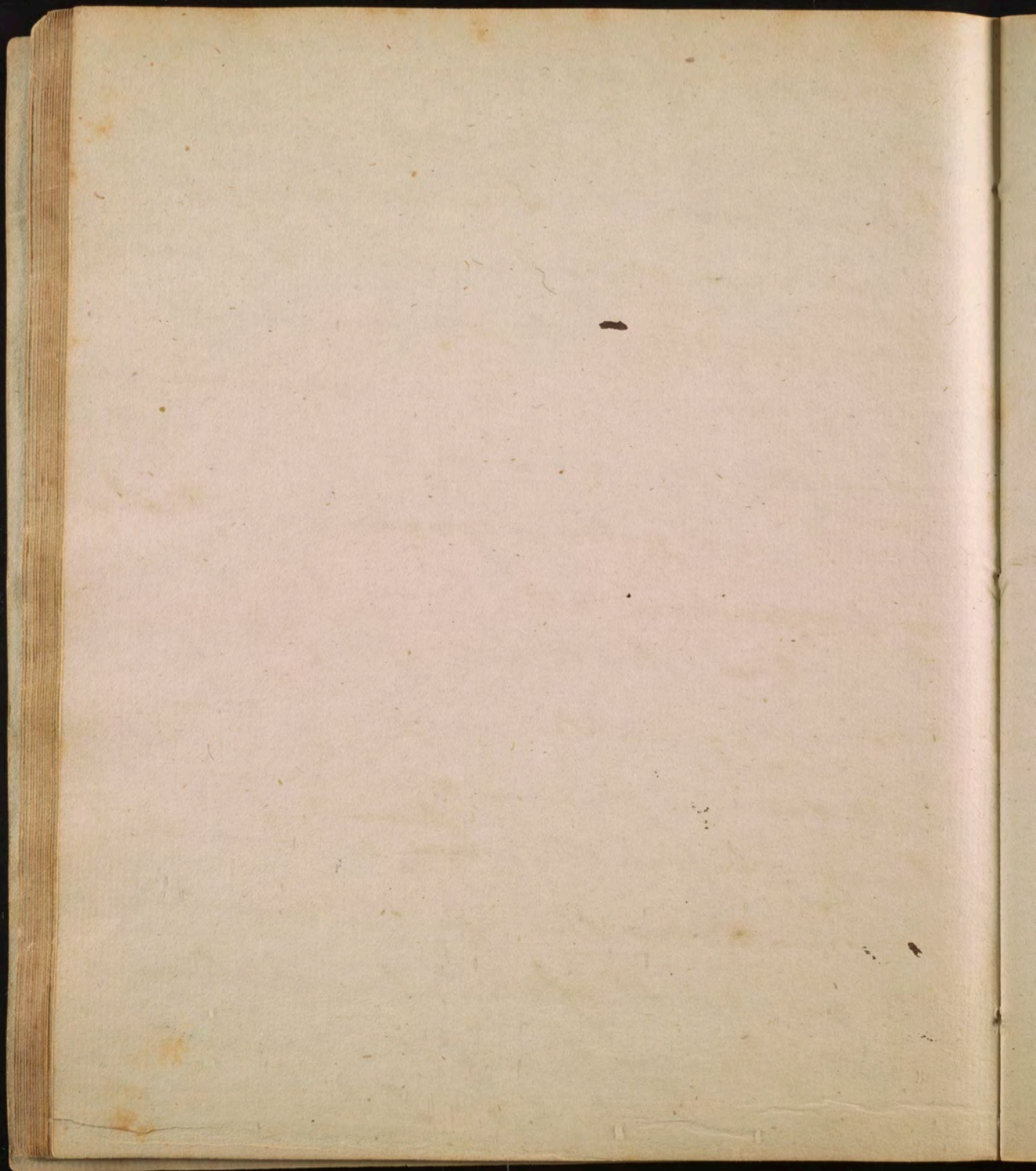
also comp^{re} of life to a free govern^{ment}
in pathology of poisons.

~~favours the generation & increase of animal heat. To the 2nd objection I answer that the depth and force of respiration in sleep may compensate for its quickness in fire in generating heat.~~ There is one fact with respect to respiration ^{in sleep} which ~~in~~ shows its immense consequence in supporting animal life, and that is, its becoming short and quick is always ~~always~~ attended with a tendency to death. It is a constant symptom of the night mare, and this as I shall say presently is occasioned by a defect of stimulus upon animal life.

3 Aliment in the stomach acts



more powerfully as a stimulus in
 Sleep than in the waking state. This
 I prove from the Digestion going on
 more rapidly when we are awake
 (provided we are at rest)
 than ^{when} we are asleep. - This is what
 all of you must have experienced who
 have sat up with sick people - But
 further - Digestion goes on rapidly
 in proportion to the number of the
 Stimuli which act upon the System.
 E.g. - In agreeable company after a
 full dinner persons often become
 hungry before they ^{leave} a cheerful
 board. Now the less the digestion,
 the greater the stimulus of Aliment
 in the stomach. Of this we have
 proofs in daily life. Labourers often



Oligent to write as a breakfast because
it digests too soon, - and often call for
food in a morning that they can
feel all day in their Stomachs. Oni-
-ous and Lefpases are generally preferr
by them for that ^{purpose.} season. - A moderate
Supper is favorable to sound and
easy sleep, and the want of it in
persons accustomed to it is often
followed by a restless night. Persons
who are not accustomed to it, it
is probably ^{that} its Stimulus may be
supplied by the fat the fulness of the
gall bladder which always attends
an empty Stomach. -

4 The Stimulus of the Urine accu-
-mulated in the bladder during the

✓ 5. The faeces exert a constant stimulus
on the bowels. This is evident from the
length of time and tendency to death which
ensue the discharge of y^m by a purge.

Sleep
~~night~~ has a perceptible influence
 upon animal life. - It is some-
 times so great as to interrupt sleep
 in the night, and I believe it is one
 of the ~~most~~ ^a frequent causes of our
 waking ^{at a regular hour} in the morning. It is more
 - over a frequent ~~a~~ cause of ^{the} exercise
 of the Understanding & passions in
 Dreams - hence we dream more in
 the ^(when the bladder is full) morning - than in our
 early or midnight slumbers. ✓

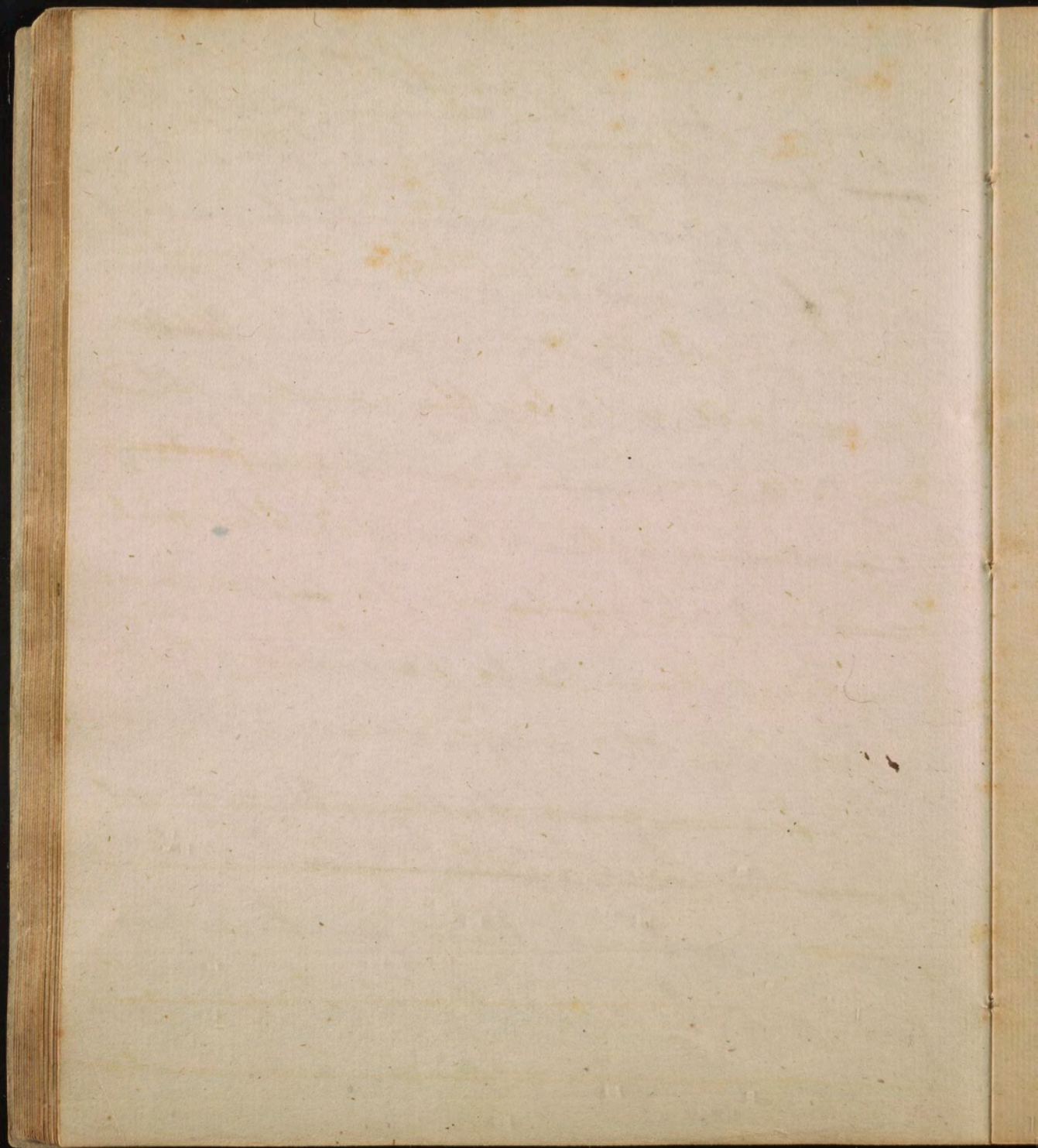
5 The exercise of the Understanding and
 Passions in Dreams is a considerable
 stimulus to animal life. ^{Dreams} They do not
 occur constantly, but they are never
 absent where there is a deficiency
 of the due force in the other stimuli

V I know a remarkable instance
of the influence of the passion of avarice
in an ^{unfortunate} citizen of Philad^a who has lately
become immensely rich by the sudden
~~rise~~ appreciation of Certificates. This
man frequently jumps ^{out of bed in} his sleep -
seizes his pistols -
- runs to his door in order to look it -
- calls out, examines his desk & in one
instance ^{violently} seized a person who slept in
the same room with ^{him} it, and arrested
him as if he had been a robber. I
called this man unfortunate gent.ⁿ
because wealth acquired in any other
way than by the gradual labor of
the body or mind, seldom fails of
producing misery. - ~~Let us see~~ the
force of the will is still more evident from
the history of De Cheynes' man, ^{Col. Townsend} who could
suspend the action of the heart when he pleased.

which have been mentioned. Dreams
~~are of two kinds~~ depend upon ^{great, or} ~~moderate~~ degrees of morbid
~~vis. excite or depressing~~ of actions in the
 Vessels of the brain. I suspect the ~~the~~
~~understanding to be~~ memory - and
 the imagination to be exercised chiefly
 in the former - ^{understanding &} ~~and~~ the passions in the
 latter case. - The ^{stimulating} passions are attended
 with Volition - and this act of the mind
 we know is always accompanied with
 more or less stimulus. This Volition
 rises sometimes into actual motion
 in the muscles of the body,
 and hence the cause of persons wak-
 -ing in their sleep. The stimulus of
~~some~~ but often awakens us ~~in~~
~~the~~ with pleasure or pain according
 as we ^{are disposed to} respect, or disobey the precepts
 of ^{our maker.} ~~the moral law~~. The angry & revengeful

V Dr Brambilla Phys: to the
Emp^r of Germany - says he has
seen soldiers who upon being
thrown into a pepsion in dreams,
their wounds became inflamed
& gangrenous. —

passions often deliver us ~~from~~ ^{fancied} in like
 manner from the ^{imaginary} danger of a battle
~~and~~ ^{or} from the guilt of murder. - Even
 the debilitating passions such as grief
 and fear produce an indirect opera-
 -tion on the system - for they ~~lead~~ ^{called}
 produce that distressing disorder the
 Night ~~sin~~ ^{mare} (which arises from a languid
 circulation of the blood in the brain)
 and which prompts ^{us} to ~~to~~ speak or
 bellow in our sleep - and this by
 quickening the respiration restores
 the languid circulation throughout
 every the ^{heart and brain} ~~vital organs~~ - V - Do
 not complain then Gent: when
 you are beset by this midnight
 Hag. She is kindly sent to prevent



an apoplexy or a sudden death.
 I cannot dismiss this head without
 lamenting that ~~philosophic~~ physicians
 have attended so little to the specific
 nature of Dreams. They have been
 examined only by the weak, and
 superstitious ^{people} with a view of finding
 discovering future events, ^{But} the only
 rational use to be that ought to be
 made of them is to find out ^{from them} the pre-
-sent State of the System. —

~~[Let us next apply our principles
 to explain some of the phenomena of
 Sleep —~~

~~1 There is a certain stage of
 diminished excitement, and wasted~~

+ ~~Iron~~ ~~mat~~: Aspiden can't sleep ^{the} with
watch in his ~~ear~~ ~~unless~~ he buries it
~~under~~ his bed so as to dreamy sound.

I have only to add to this Gent.
 have I endeavored to ^{explain} ~~unfold~~ the
 State of animal ^{life in} sleep, & I hope I
 have proved that even in this State
 of the system it is supported by ^{the system.} ~~sleep~~
 - Life is in its most perfect state when
 we are awake - It is a state of
 diminution in sleep - for sleep there-
 in one respect
 - fore may be considered as a tendency
 to death. - I have only to add that
 the excitability of the system w.
 is regenerated as it were during the
 night by the abstraction of stimuli
 has a wonderful effect in upon
 animal life every day in the wak-
 -ing state of the body. This reprodu-
 -tion of excitability by the abstraction

v I pass over for the present the history
of the origin of ~~human~~ ^{animal} life in generation.
I hope to prove hereafter that its first
pulse or motion is produced by the stimulus
of the Semen masculinum ^{upon} the
female Ovary. In the mean while,
I shall only mention that Mr. Sa. Hunter
has discovered the male seed to possess
a pungent taste which ~~instantly~~ ^{speedily} diffuses
itself over the tongue & mouth. —

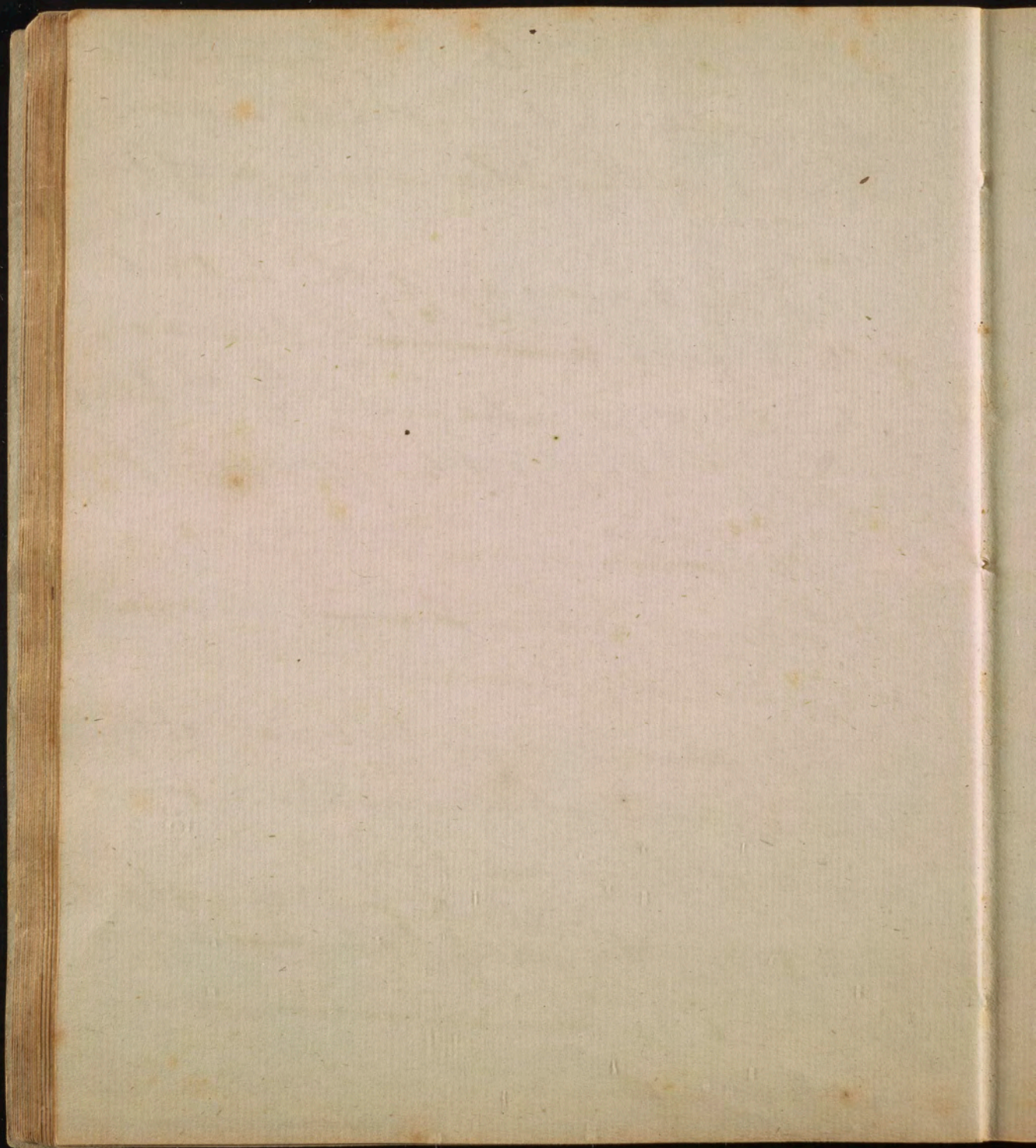
11. Semen putres a Semine masculini
^{stimula} ~~est~~ ^{est} concipiscit. Haller Vol 8 p. 177
v

73
of Stimuli is a ^{the} law of system. It
will enable us hereafter to explain
many of the phenomena of dis-
eases. —

I shall now quit the subject
of Sleep for a ~~few minutes~~ ^{while}. I have ex-
plained those phenomena ^{of it only} belong-
ing to the history of life. Hereafter I
shall ^{enquire} ~~enter~~ more minutely into
its causes, and ^{describe} ~~influence~~ its effects
& uses in the system.

I proceed now to treat of the
State of animal life, in the different
periods of human life. ✓

I In the ^{after the production of life, it} fetal State, life is sup-
ported & by ^{the heat which} ~~the contraction~~ of the
foetus with its desires from its



connection with its mother in the womb -

2^d By the stimulus of its own circulating blood. and

3^d By muscular motion - for the motion of a child in the womb is not only the most certain sign of pregnancy, but it continues with for six months of that period. The absence of motion for a ~~few~~ even a few days always affords a sus-

spection that the foetus is dead.

we come next to inquire how is

II. Animal life is supported in

Infancy? 1st ~~By~~ ~~respiration~~ the external heat of the atmosphere - 2^d by respiration - 3^d by the stimulus ^{of the} air on its body - 4th by its ^{the} increasing activity

+ also of the Stimulus of Urine, focus, &
bilis, for the first wants acrimony, the
2nd factor, & the last bitterness. Haller p. 25
part 2nd ed. 30

V Take notice here that Contractility
predominates over sensibility in Infancy.
~~They~~ They have less feeling, & a greater
disposition to motion than grown
people.

also by greater sensibility to heat
sent of Ombreville ~~the~~ child living
on the back of his mother frozen to
death. They recover more easily from
acute diseases - never despair of a child -
owing to the capacity of life being in a
more sensible state, or to use Dr Ligonier's words
their having greater tenacity of life. —

of its limbs and body, and by all the

Here we beheld the system in a state
in which it is deprived ^{for a while} of the stimulus

of exercise, and of the understanding
and passions⁺ - but this is amply

supplied, 1 by the greater excitabi-

-lity of their ^{muscular} systems to the stimulus
of light - sound - heat - and air.

So great is the stimulus of the first
two viz light & sound, y^t nature

has kindly defended their eyes, &

ears by imperfect vision & hearing

for several weeks after birth. V

2 by their feeding and sucking nearly
every hour in the day and night when

they are awake. I explained for:
- nearly how

✓ Laughing ^{seems to be a} ~~is an essential~~ ^{essential} stimulus ^{to} ~~in~~ and
the life of a child - for it is universal, ~~and~~
seems to exist under all circumstances, in-
-dependant of education or imitation. The
child of a negro slave, born only to inherit
the toils and misery of its parents, ^{receives} ~~meets~~
its future master with a smile every
time he ^{enters} ~~goes into~~ his kitchen or visits
a negro quarter. - But laughing exists in
Infancy under circumstances still more
unfavourable to it - a remarkable instance
of which is related by Mr Bruce in ^{his} ~~the 2^d volume of~~ his
travels. After a journey of several hundred
miles across the burning sands of Arabia,
he came to a well of water shaded by
a few scrubby trees. Here ~~in the~~ he
~~intended~~ ^{intended} to have rested during
the night - but he had ^{not} long reposed

food acts in stimulating the system.
The action of laughing supplies by the
muscles employed in it, the action
of mastication. —

3 by its constantly laughing, or
crying. The effects of both on respiration — the circulation of the blood,
& of course on animal life are
very great. [✓] ~~Laughter~~ Laughter is said
to increase and prolong human
life according to Storr. The common
saying of "Laugh & be fat", seems to
establish ^{its} ~~the~~ efficacy upon ^{the} health
& figure of ^e body. But it is less
notorious that crying in infancy
has a wonderful influence upon

himself before he was awakened by ^{the}
noise of a rattling chain which upon
~~getting up~~ ^{which} he perceived ~~to be~~ ^{was} made by a
solitary Arab, equally fatigued & half
furnished with self, ~~this man was~~ ^{who was} prepa-
-ring to plunder and murder him. Mr.
Bruce rushed upon him & made him
his prisoner. The next morning he was
joined by ~~his~~ a half starved female coun-
-terpart with an infant ^{of six months} ~~in her arms~~
old in her arms. In passing by this child
~~the~~ Mr Bruce tells us, it laughed - and
crowed in his face, and seemed ready to leap
upon him. I acknowledge that I met
with no fact in ^{works} that the ~~traveller~~ ^{that} of the
ingenious & enterprising traveller that
affected me more. ^{This fact} It clearly demon-
-strated that laughing is not only an
essential characteristic of man, but

health & life. It is frequently connected
with the first openings of passion.
I have seen so many instances of
the salutary effects of crying, that
I have reserved the common saying
before mentioned, and satisfied myself
that it is as possible for a child to "cry
& be fat," as it is to "laugh & be fat."

As infants advance to childhood,
and laugh & cry less - & eat or suck
less constantly, they, use more exer-
-cise than adults. - ~~They are always~~ Their bodies
~~in motion~~ their limbs - and their
tongues are ^{always} ~~never~~ idle in motion.

They moreover continue to enjoy
the ^{constant} stimulus of food ^{night} ~~during~~ & day,
for they often carry bread to bed w:
them, and generally ask for it

that it is
essential to the life of children - The child of
these Arabs had probably never suckled any milk
but such as was prepared from the grossest
flesh & ~~it~~ had probably never seen even
a smile upon the face of its ferocious parents.
~~and its mother~~

th
5: V My Dreams. These begin very early
in children. Their sudden Startings in
y: Sleep I suspect are often occasioned by
them. I know from Observation that
they are very common after ^{they are} 2 or 3
years old. -

6 By novelty. Every object of whatever
produced by Nature or Art, is
new to a child, and is never ~~seen~~ ^{seen}

before they rise in the morning. It
 is now their understandings, ^{& passions} begin
 to add ^{their reflex} ~~strong~~ stimulation to their system,
 but so feeble is the former for some
 time in its stimulus, that we find it
 assisted by their giving vent to their
 ideas as fast as they rise by ~~conversa-~~
~~-tion~~ constantly ~~let~~ prattling. This turn
 for talking follows them to their beds,
 where we often overhear them
 talk ^{to} ~~themselves~~ to sleep in a whisper,
 or ^{to use} in less correct, but more ~~in-~~
 striking terms ^{by} thinking aloud.^v

III. In youth ~~and also~~ from the
 influence of all the stimuli that
 have been mentioned, ~~too~~ and
 more especially from the exercise

or felt by it without an emotion
of pleasure which acts as a stimulus
upon its system. The effects
of novelty upon animal life in
Infancy, may easily be conceived
from its influence upon health
in persons who visit foreign coun-
tries, & who pass months or years
in a constant succession of new
& agreeable impressions. They seldom
fail of improving ^{even} adding not only to
~~their~~ health, but to corpulence.

79
of the passions human life is of:
- ten in excess. - From 15 to 35, those
" (to use a phrase of D. Bolingbroke)
the passions blow a perpetual storm".

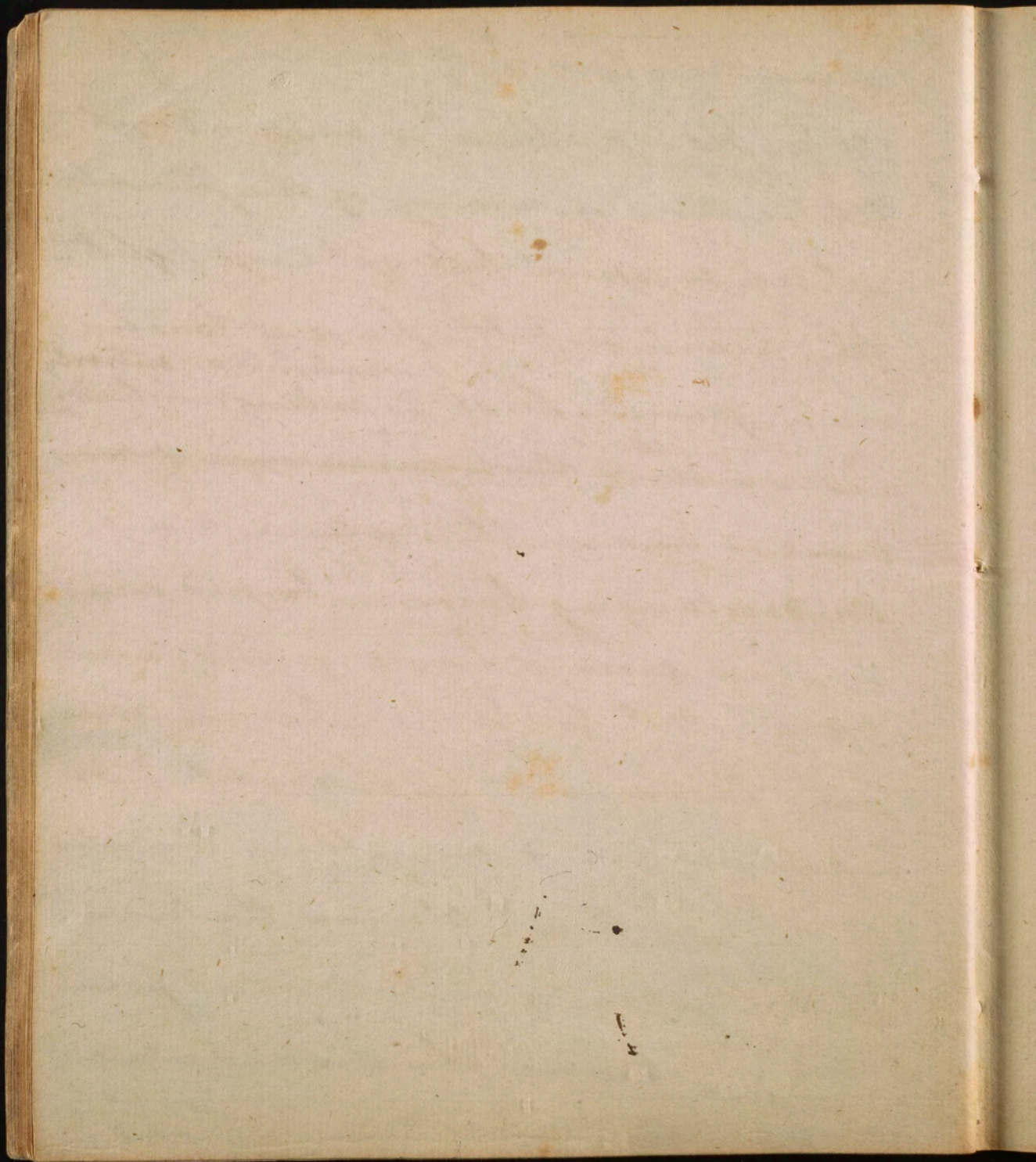
Among the most predominating of them
in this period of life ~~was~~ is the love of
pleasure. - no sooner is the excita-
- bility of the system worn down to
this ^{stimulus} ~~system~~, that Ambition succeeds
it in

IV the middle stage of life. when
this ~~and~~ passion is moderate, it gently
feeds the flame of life. It is now
animal life is in its most perfect
state - and hence ^{bills of ~~which~~} records of the
^{mortality} ~~establish the chances of life~~ prove
that fewer people die between 40
and 57 ~~than~~ than in any other

24
V Hence the ^{4 pauses} slowness of their pulses &
hence their short & interrupted Sleeps -

seventeen years ⁸⁰ of human life.

~~IV~~ In Old Age - there is an evident
Abstraction of many of the stimuli
which support life. The eye sight -
the hearing - & the sense of touch
are impaired. Lust is ^{weakened or entirely} extinguished;
and ^{with} most of the passions ~~except one~~
 ~~cease to act on the system~~. Even the
Understanding becomes torpid except
in those cases ^{where} it has acquired in early
life a relish for books. - Exercise more-
over becomes impracticable, or
irksome - and every thing indicates
to a superficial observer the tendency
of the system to immediate dissolu-
-tion. But here the divine Architect
shows that his wisdom is not exhaus-
-ted,



& that nothing shall defeat the Designs
of his Goodness. The absence and ~~depression~~
diminution of all the stimuli which
have been mentioned ^{are} supplied

1 By the activity of certain passions.

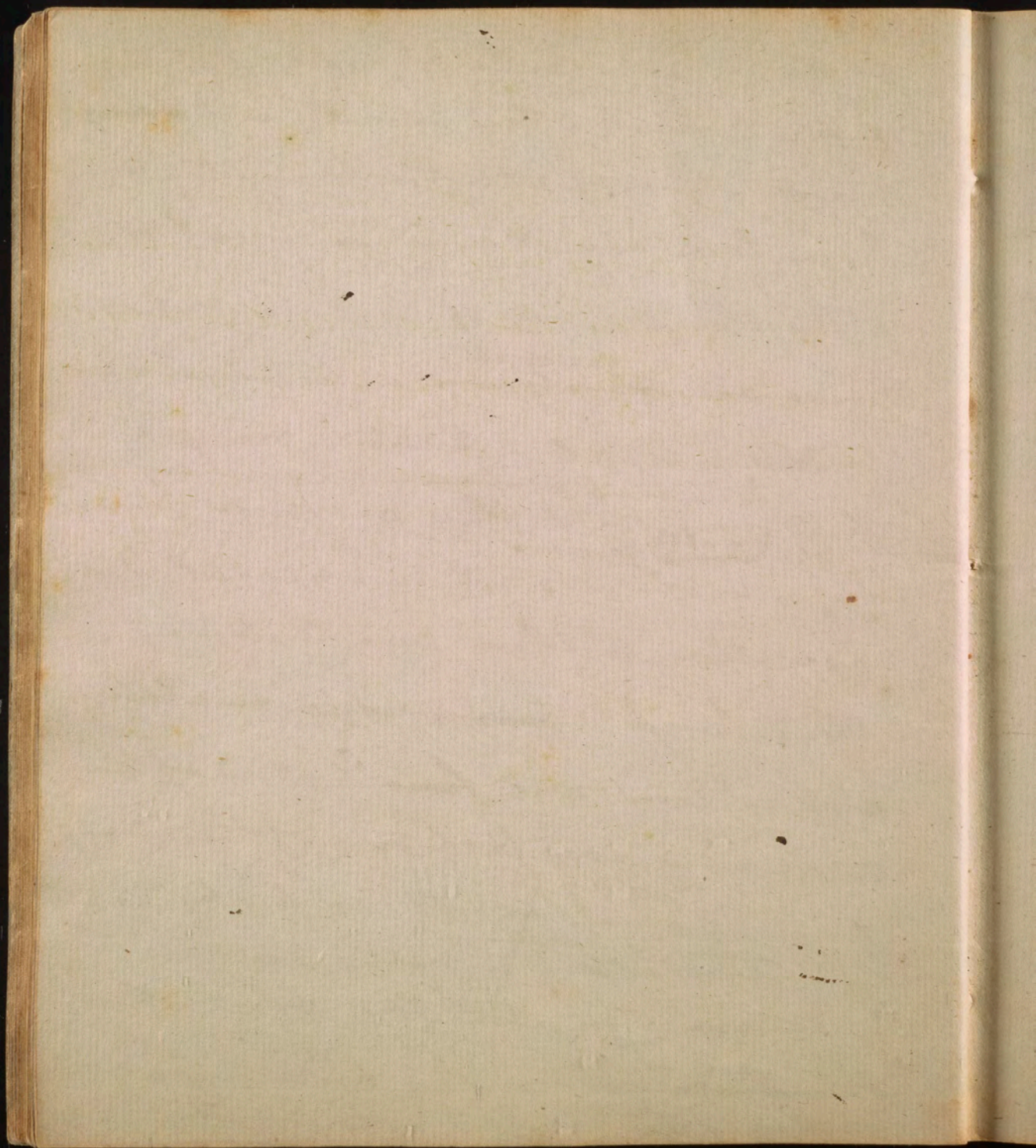
These are ^{generally} ~~instincts~~ an intense and
preternatural affection for grand
children ^{& in some instances an increased vigor} but they are more frequent
in the ^{moral} ~~power~~ powers -
-ly, a violent and unnatural dis-
-affection to their own children -

- Perishness - ~~ferocity~~ malice -

and a constant ~~ferocious~~ hatred of the
manners and fashions of the rising

generation. [Expressed by Horace
in the following words.]
Landator temporis Acti -

se ~~perit~~ But the most steady
stimulus under this head is Uranie.



This passion knows no holidays. Its stimulus is ~~very~~ various, as well as constant for it finds new employment every day in the ~~var~~ numerous means which Nature has discovered to increase - to secure - & to perpetuate health. —

2 The absence of ~~former~~ ^{lost} impressions, ^{in sleep} are supplied in old age by Dreams. — For I have found that old people dream every night — This is probably occasioned by their short & imperfect sleep.

3 — By the stimulus of fluids rendered ~~more~~ ^{more} acid by age. The Urine — the Sweat — & even the tears of old people, all possess a peculiar acrimony.

v and hence too the reason why cancers
are more common in the decline, than
in any other period of human life.

Their very blood ~~acquires~~ degenerates from ~~in~~ its the mixture that is natural to that fluid, and hence the difficulty with which sores heal in old people.

5 By the stimulus of the faces which are frequently retained for five or six days in old people. - Lethargy is ^{an} universal ~~one~~ of old age.

4 By, - the ~~great~~ increase in the quantity & by the peculiar quality of the food taken by old people. They generally eat twice as much as persons in the middle of life, and like children they love to eat often. They moreover prefer cordial stimulating food, such as the fattest meats - with the richest gravies. ^{also} strong coffee - tea & the like. The ~~the~~ stomach of the celebrated

✓ It appears to be ^{useful} ~~more~~ ~~essential~~ in every stage of life. hence the remark that silent women are generally unhealthy. — +

7 By their wearing warmer clothing than usual, & preferring stove rooms &c. This is so true — that I could almost tell a man's age by first finding out ^{at} what degree of heat in Larenheit's thermometer he ^{found} ~~often~~ himself comfortable in a room. —

8 It is said that ^{we} ~~men~~ are ~~two~~ once men & twice children. In speaking of Infancy, I ~~was~~ remarked that ~~con-~~ tractility predominated over sensibility. The same thing takes place in old age.

84

Pan who died in the 150th year of his
age in the reign of ^{one of the} Charles ~~the 2nd~~ ^{in England} was
found full of strong nourishing Aliment.

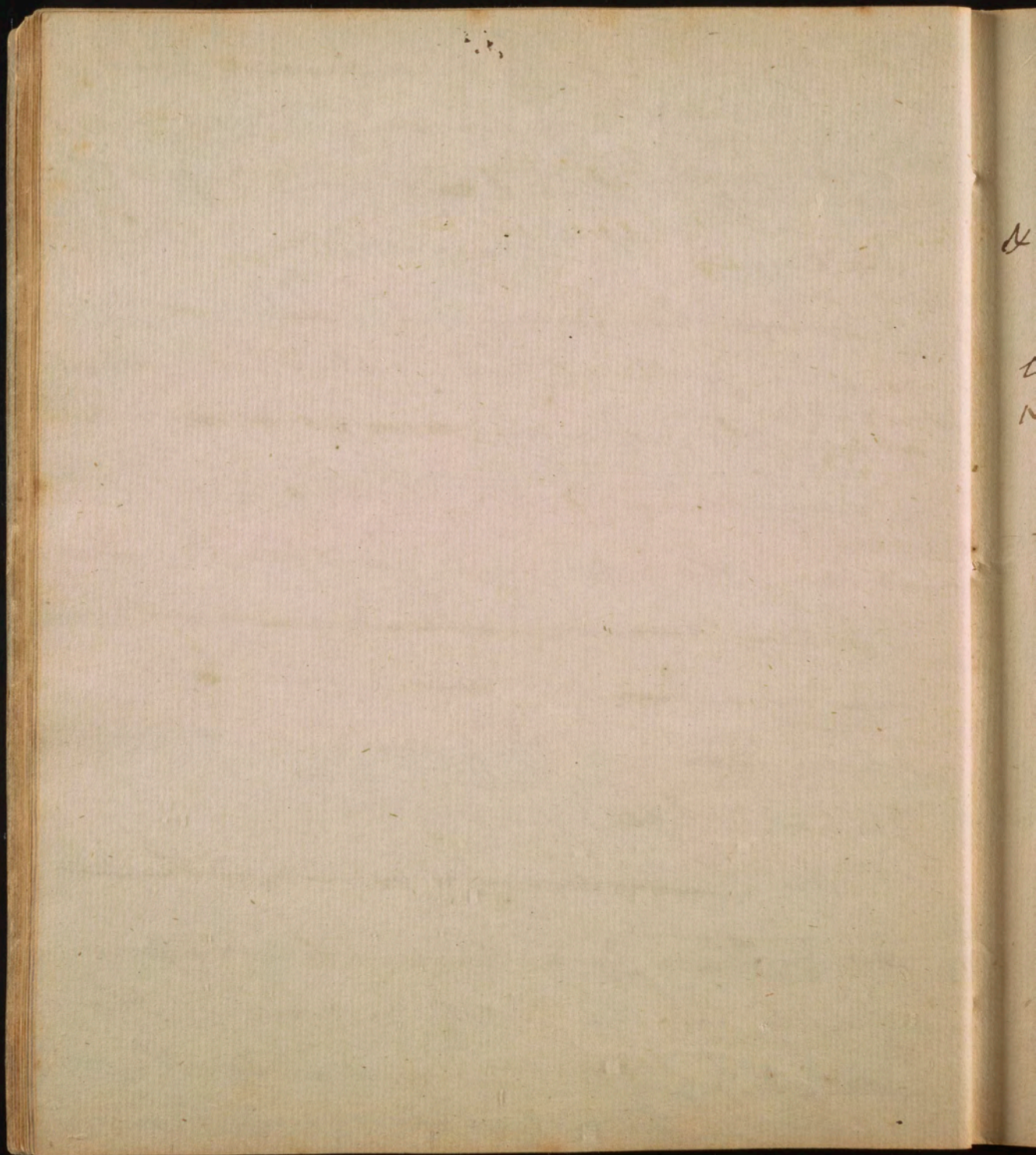
6 By the passion for talking which
is so common among old people.
Hence the saying of "Narrative old age."
It before speaks of ~~the~~ stimulus on ~~the~~
of this action of the lungs
~~system the system~~ on and the
circulation, & on animal life. ^v

~~It is inevitable~~ There is some
difference between the ^{number} force of stimuli
^{which} ~~act~~ act on the two sexes in old people.
~~They act generally longer on women~~
~~than men~~. Women have the stimulus
of labor much longer than men.
They knit, and spin and even sew
after they lose the use of their eyes &
ears & even limbs. ^{now each} ~~There is this~~
of these employments gently stimulates

In consequence of this change in the
state of ^{the} system in old people, all
the stimuli which have been mentioned
act upon them with much more force
than in middle life. — X see p 85.

the system. Men who survive the loss
 of or decay of their houses, generally pass
^e the evening of their lives in a vegetable
 State in a chimney corner. The
^{answer} ~~Questions~~ therefore which ^{the} physician
 gave his patient who asked him what
 was good for ~~an old woman?~~ ^{was good for}, was
 a very absurd one. It was - "What
 is an old woman good for?" - ~~The~~
~~- I am sure I can answer your question~~
~~Questions~~ ~~That~~ old ~~men~~ women very
 seldom survive their respectability in
 domestic life. —

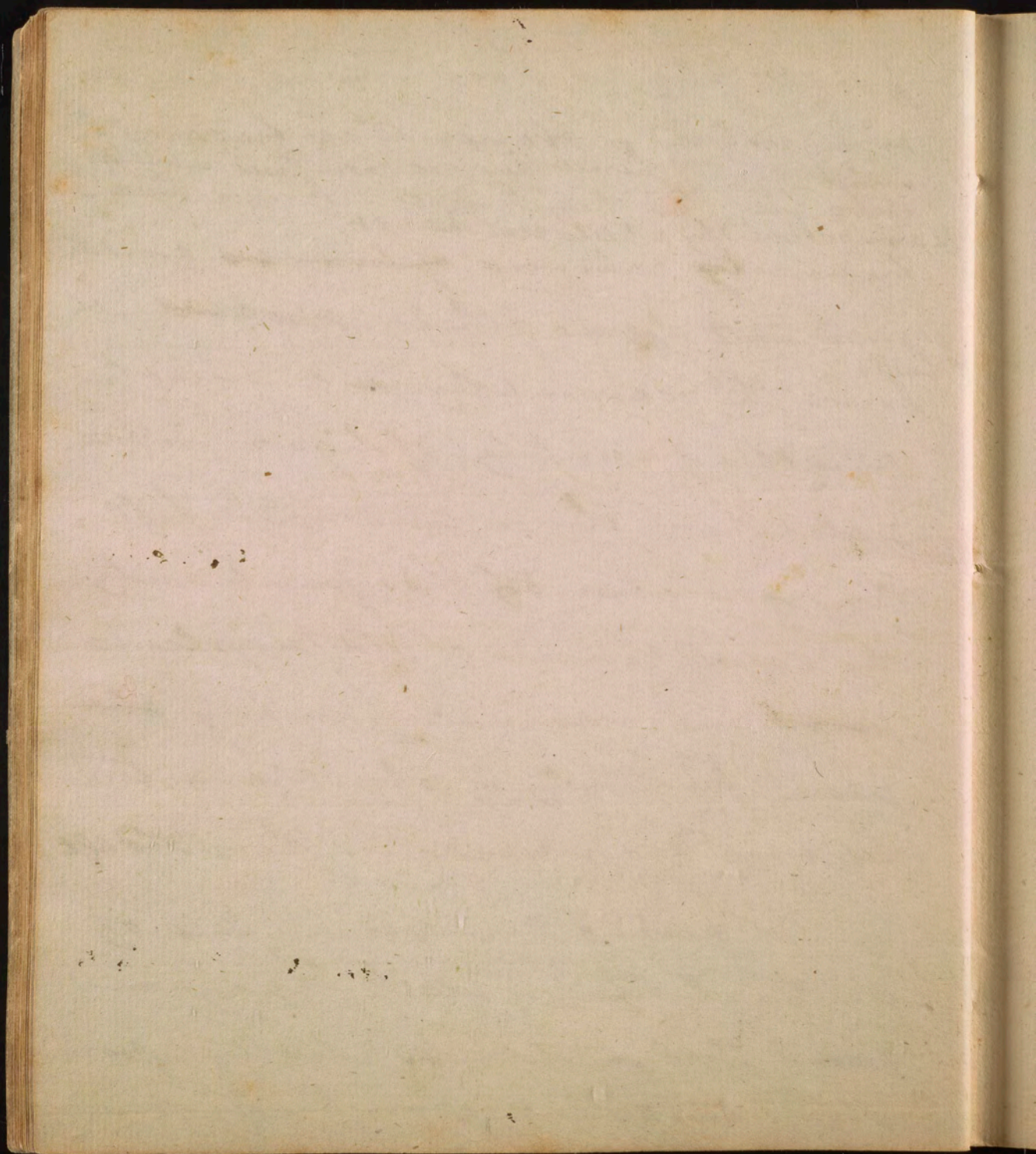
~~There have I observed the state~~
 of * There is a remarkable simi-
 -larity in the constitutions of old
 people ⁱⁿ which they resemble the
 constitutions of children. Their



excitability is soon wasted, and
 soon restored - Hence they frequently
 sleep ^{hence they are soon tired in walking &}
~~down~~ in the day time - hence too'y.
 & soon refreshed by a little rest ^{& 1/2}
 frequently returns of ~~their~~ ^{the} and the
 inordinate degree of their appetites - &
^{lastly} hence the reason why ~~as~~ a much
 smaller quantity of liquor intox-
 -icates them than in middle life.

An ignorance ~~of~~ this peculiarity in
 the constitutions of old people is
~~perhaps~~ one reason why many old
 men formerly of sober characters
 become drunkards in their old age.

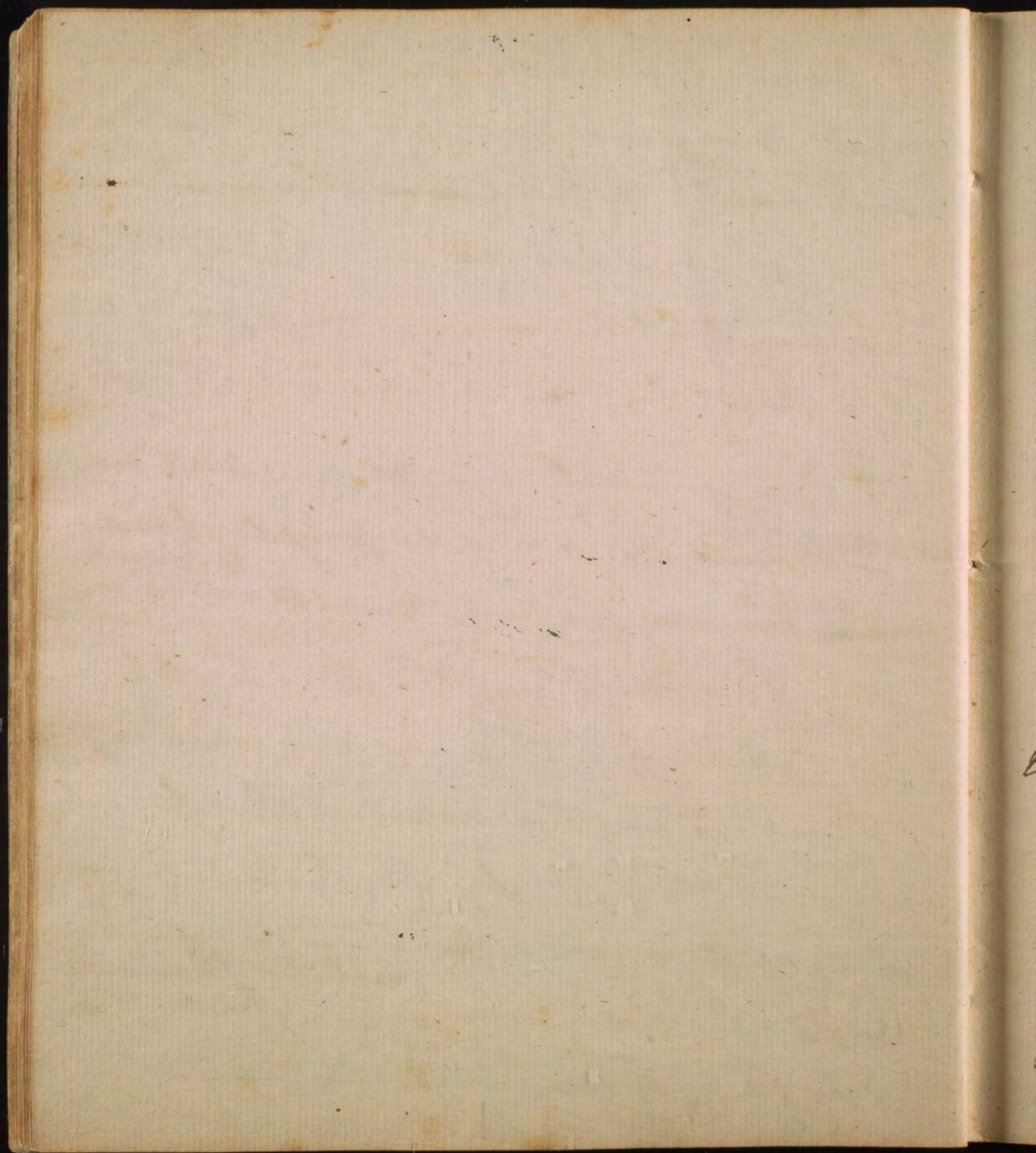
Having reviewed the state of
 animal life in all its stages, and
 proved that it depends wholly upon
 stimuli acting upon the sensibility,



87

& stimulability of the system, I proceed
next to inquire how far our theory
will apply to the ~~biotic~~ phenomena
of certain diseases in which there
is an abstraction of some, or of all
the stimuli that I have mentioned.

1 Many people are born both deaf
& ^{blind - and dumb,} ~~dumb~~ - and many people lose
~~the~~ the use of their eyes & ears by
diseases. - Here there is an absence
of light - sound & in one case of
speech. - The defect of these stimuli
is sensibly felt by the system, - for
all such persons become languid or
torpid in company. ^{reflected stimuli} - But the
Understanding - and the passions
in some cases - as in Homer & Milton



a more exquisite

88

Of the sense of touching or touch in
others, ~~be~~ by becoming more exquisitely
~~sensible than even what is common,~~
supply the place of all the stimuli
which have ceased to act on y^e system.

The sense of touch in some blind
people has become so exquisite as
to distinguish colors. The senses of

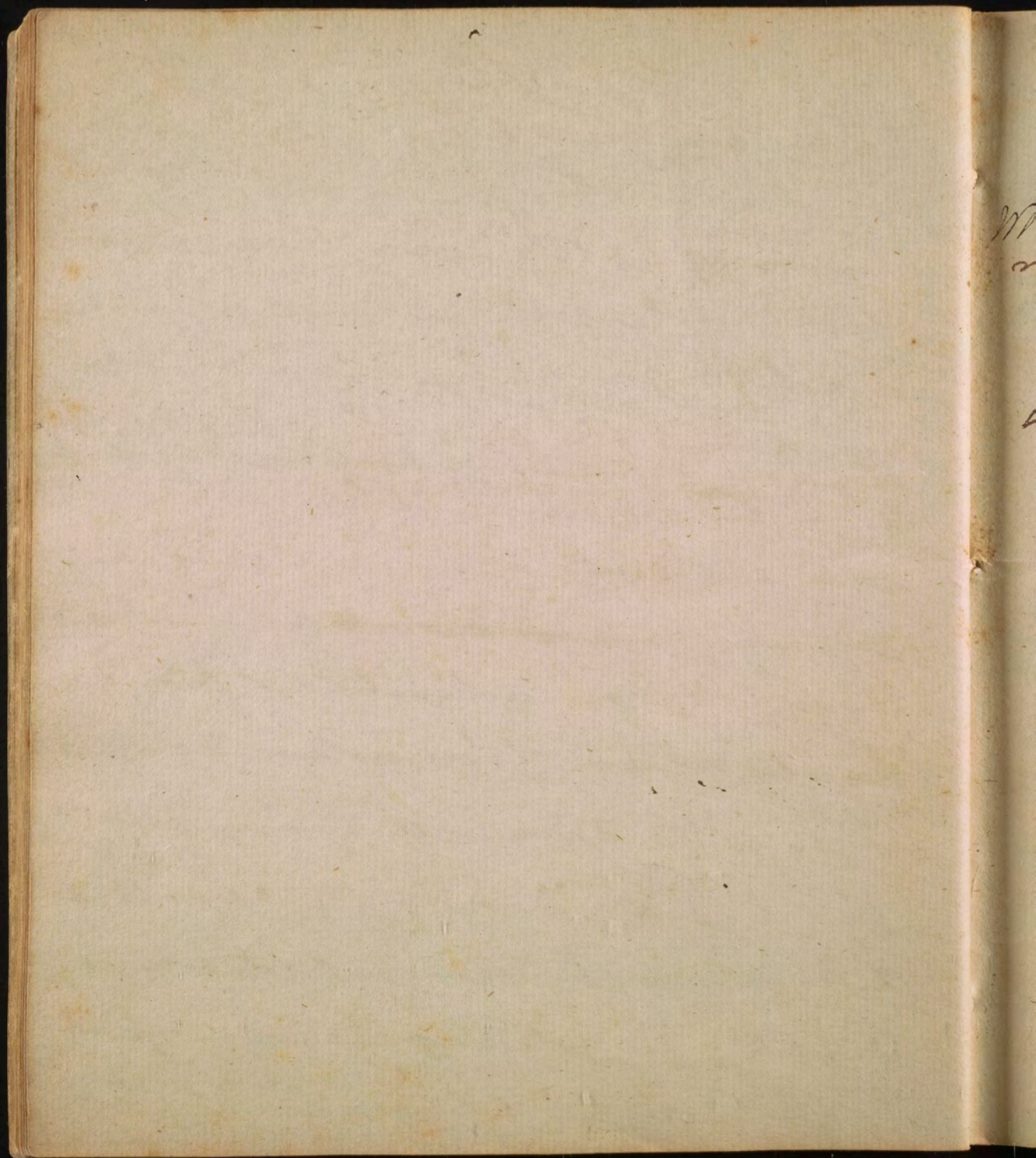
hearing ^{& smelling -} likewise by becoming more
acute in blind ^{people} ~~the~~ amply supplies

the want of light. There are two
blind young men brothers
~~brothers~~ in this city of y^e name

of Dutton - who can ^{tell} when
approach a post in ^{walking across a} ~~the~~ street by
a peculiar sound (to us not only
imperceptible, but inconceivable)
which the ground under their feet

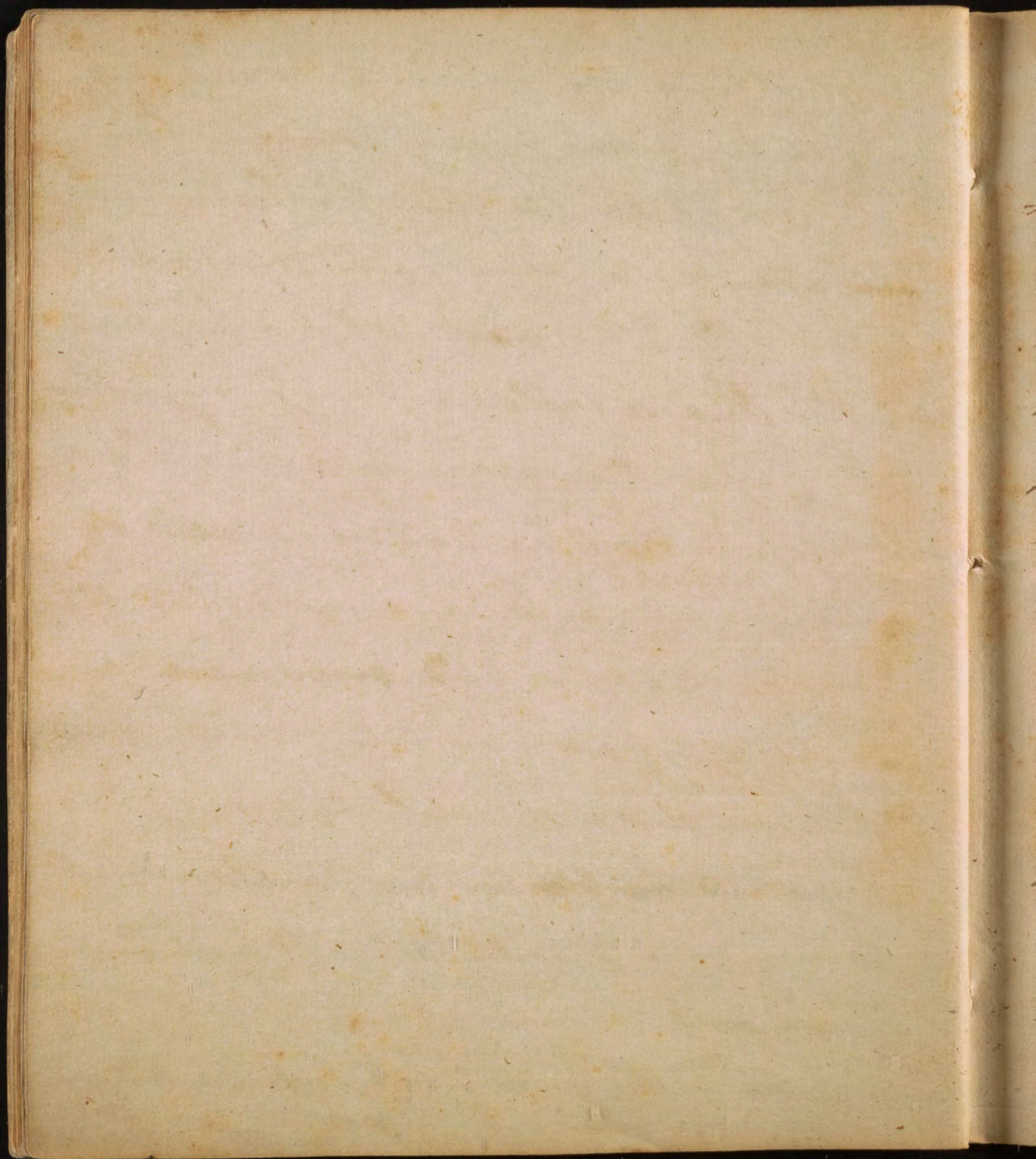
+ A family in Maryland of the name
of Le Court became blind at ^{the age of} ~~12~~ ²⁰ years.
- by one, after which they acquire
an ear for music. —

emits in the neighbourhood of the
 posts. ~~They~~ Their sense of hearing goes
 even beyond this, - they can tell the
 cranness of half a dozen tame pigeons
 with which they amuse themselves
 in a little garden, by only hearing
 each of them fly over their heads. Dr
 Mayes once distinguished a friend dressed in black
 by the ~~effect~~ ^{by the effect of his coat.} +
 2 We behold animal life in persons
 who are devoid of understanding, and
 passions, as in ~~idiot~~ and who
 from folly or imbecility of body, are
 scarcely possessed of locomotive powers.
 This is the case with many Idiots.
 But here an inordinate appetite
 for food, or for sensual pleasures,
 supplies the place of reason-passions
 & exercise. of the presence of the



last of these passions in an excessive⁹⁰
degree we have many proofs. For —
M^r Clayton tells us that the Retins are
~~much~~ ^{all} addicted to venery. Dr Michaelis
tells us that the idiot whom he saw
at the Piside falls in New Jersey who
had passed 26 years in a cradle,
confessed that he had venereal desires,
and wished to be married, for the
Dr adds, that he had ~~overcome~~ a
sense of religion on his mind, and
^{of course he} ~~therefore~~ did not wish to gratify his
appetites ~~at this~~ in an unlawful
manner. He will not add here further
~~these are~~

3 How is animal life supported in
persons who have fasted for five



or six days in health, or for two or three weeks in certain diseases particularly ⁱⁿ fevers? - I answer in the former case it is supported 1st by the stimulus of a full gall bladder 2nd by the increased acrimony of the Urine - perspiration ^{of the} matter - breath - & saliva. - The breath is so acid ^{after long fasting} as to draw tears from the eyes of persons who are exposed to it - & the saliva often excoriates the gums. 3rd by the increased sensibility of the sense of touch ^{feel weakly} 4th by the increased vigor and stimulus of the Understanding. Of the last we have many proofs. Gamsters when ^{in London} they are about ^{live} they play ^{in long runs} generally ~~feed~~ for a day or two on roasted Apples & cold Water.

